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ABSTRACT

The subliminal psychodynamic activation method (SPA), used in testing psychoanalytic propositions, has been subject to recent criticisms regarding methodological weaknesses. A review of the literature relating to this method can be helpful in determining the validity of these criticisms and the potential usefulness of the SPA method in testing such theoretical constructs as intrapsychic conflict and wishes for merger. A critical examination of such methodological elements as measures used to assess changes in psychopathological symptomatology and the specific stimuli used to effect these changes revealed that methodological weaknesses do exist, particularly in relation to the measures used to assess the effects of subliminal stimulation on psychopathological symptomatology and in the comparisons of stimuli. Specifically, in studies with both schizophrenic and nonschizophrenic populations, no validity data were reported in the literature for any of the measures used. In spite of the limitations in interpreting the results of SPA studies, however, the SPA method has been shown to be effective in producing specific results in a variety of diagnostic groups. Additionally, this method has given further evidence of the unconscious nature of intrapsychic processes. In this way, the SPA method has at least given evidence that the pursuit of testing psychoanalytic constructs is a worthwhile and plausible effort with important implications for both the theory and treatment of psychopathological symptomatology. A five-page reference list is provided. (NB)

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REVIEW OF THE SUBLIMINAL PSYCHODYNAMIC ACTIVATION METHOD

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Doctoral Research Paper
for the Degree of Doctor of Psychology

ROSEMEAD SCHOOL OF PSYCHOLOGY

BIOLA UNIVERSITY

JANICE SUE HOFFMAN

1986

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REVIEW OF THE SUBLIMINAL PSYCHODYNAMIC ACTIVATION METHOD

BY

JANICE SUE HOFFMAN

A doctoral research paper submitted to
Rosemead School of Psychology
in partial fulfillment of the requirements
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1986

REVIEW OF THE SUBLIMINAL PSYCHODYNAMIC

ACTIVATION METHOD

BY

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ABSTRACT

REVIEW OF THE SUBLIMINAL PSYCHODYNAMIC

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The subliminal psychodynamic activation method (SPA), used in testing psychoanalytic propositions, has been subject to recent criticisms regarding methodological weaknesses. The literature relating to this method is reviewed in order to determine the validity of these criticisms and the potential usefulness of the SPA method in testing such theoretical constructs as intrapsychic conflict and wishes for merger. Such methodological elements as measures used to assess changes in psychopathological symptomatology and the specific stimuli used to effect these changes are critically examined. It is determined that methodological weaknesses do exist, particularly in relation to the measures used and in the comparisons of stimuli. In spite of the limitations in interpreting the results of SPA studies, however, the SPA method has been shown to be effective in producing specific results in a variety of diagnostic groups. Additionally, this method has given further evidence of the unconscious nature of intrapsychic processes. In this way, the SPA method has at least given evidence that the pursuit of testing psychoanalytic constructs is a worthwhile and plausible effort with important implications for both the theory and treatment of psychopathological symptomatology.

Review of the Subliminal Psychodynamic Activation Method

The issue of empirical evidence in support of psychoanalytic theory has been and continues to be very controversial in psychological circles. Psychoanalytic theory consists of such nebulous concepts as the unconscious, fantasies of need gratification, and introjection, etc. Since these concepts are not directly observable, however, it is very difficult to "prove" the various elements of this theory. In some attempts to do so, one tool that has been used is the subliminal psychodynamic activation (SPA) method developed by Lloyd Silverman in the early 1960's. This method has been used primarily to test hypotheses related to unconscious wishes and fantasies. The majority of this work has been done with schizophrenics, but in recent years the research has been expanded to include other populations, both clinical and nonclinical.

The findings of the research on SPA to date have been mixed. Most seem to support the original research which indicates that stimulation of various unconscious wishes and fantasies has an effect on psychopathological symptomatology (cf. Silverman, 1983; Silverman, in press). Although the results obtained through the use of this method do not necessarily "prove" psychoanalytic propositions, inferences about such concepts as unconscious conflicts and wishes regarding aggression and symbiosis have been made which are thought to support psychoanalytic theory. Several recent studies, however, have failed to replicate the earlier results. One explanation offered for

these failures to replicate is that Silverman and others used poor experimental methodology in the studies supporting their hypotheses (e.g. Condon & Allen, 1980; Haspel & Harris, 1982; Heilbrun, 1980; Oliver & Burkham, 1982; Porterfield, 1983). These dissenting authors have indicated that in the previous research there were serious flaws in selection of subjects, choice of statistical methods and measures of dependent variables. The question arises from these criticisms as to whether or not SPA is really doing what it is purported to do, namely, activating unconscious wishes and fantasies which have an effect on psychopathological symptomatology.

Since researchers are continuing to use SPA in attempts to provide empirical support for various aspects of psychoanalytic theory, it is essential to address the question of the effectiveness and validity of the SPA method. If the answer is no, researchers will need to seriously reconsider the meaning of their "supportive" findings. If, on the other hand, the answer is yes, several additional questions are raised. What fantasies are being activated? How are they being activated? How do we know they are being activated? What meaning does activation of these fantasies have in light of psychoanalytic theory and treatment? In an attempt to address these questions, this reviewer will look at such methodological aspects of SPA as types of stimuli and measures used to assess the effects of such stimulation. This will be preceded by a brief history and description of the SPA method. The specific theoretical propositions that subliminal stimulation is purported to

support will be presented as they relate to the particular hypothesized effects of such stimulation. Finally, the theoretical and clinical implications of the conclusions of this review will be discussed, followed by suggestions for further research.

Before beginning, it is necessary to define the scope of this review. Subliminal activation as a means of registering messages outside of one's conscious awareness has been used in various settings and in a variety of research studies since the early 1900's (Silverman, 1976). Whether or not messages can be subliminally registered is a question that has been dealt with and reviewed elsewhere (Dixon, 1971), with the conclusion that subliminal registration has indeed been demonstrated beyond any reasonable doubt. Thus, I will limit this review to the investigation of the subliminal activation of unconscious psychodynamic wishes and fantasies as attempted by Silverman's SPA method.

Description of the Subliminal Psychodynamic Activation Method

The subliminal psychodynamic activation method was developed by Silverman in the early 1960's (Silverman, Lachmann, & Milich, 1982). This was in response to the relative lack of systematic, rigorous research done in the area of psychoanalytic theory and psychopathology up to that point. After a series of initial experiments which helped to refine his technique, Silverman began testing hypotheses involving the relationship between schizophrenic psychopathology and unconscious conflict over aggressive impulses. This research prompted further

questions and led to additional research with both schizophrenic and nonschizophrenic populations (reviewed in Silverman, 1983).

In the subliminal psychodynamic activation method, subjects are exposed to a message designed to stimulate unconscious wishes and fantasies. This is accomplished by the use of a tachistoscope, which controls the breadth, distance and illumination of the visual field, and length of time that the message is exposed. A subject looks into the eyepiece of a tachistoscope and, although having been exposed to a picture and/or verbal message for 4 msec., the subject is consciously aware of having seen nothing more than a few flickers of light. Silverman (1967) described the effect of this subliminal exposure:

> If a clinically sensitive instrument is used to assess the effect of this registration, much more appears than aspects of the original picture. One can then discern [derivatives of the unconscious wishes seeking expression,] defensive operations appearing in reaction to these derivatives, and the emergence of various kinds of psychopathological reactions. All this occurs on a small scale and lasts but a brief period of time, yet these changes in the individual's functioning have proved to be clearly discernible and even measurable. In short, we have found it possible to produce and study under controlled laboratory conditions microcosms of many of the phenomena that psychoanalysis has concerned itself with since its inception (pp. 376-377).

The "clinically sensitive instrument" used to measure the effect of such registration consists of measures of psychopathological symptomatology. These include such measures as the story recall test, word association test and tests of pathological overt (non-verbal) behavior. This is one of the aspects of methodology that is critically examined in this review and is discussed in a later section.

An important aspect of the SPA method is the subliminal presentation of the stimuli since, according to the theory, "the link between psychopathology and libidinal and aggressive wishes usually depends on the wishes remaining unconscious" (Silverman, 1976, p. 624). It is thought that if such wishes are made conscious they can be directly and adaptively expressed, thereby making indirect expression of them in the form of psychopathological symptomatology unnecessary. This theoretical proposition has been supported in several studies. For example, Silverman and Spiro (1968) exposed male schizophrenic subjects to an aggressive stimulus both subliminally (4 msec.) and supraliminally (10 sec.). They predicted that the supraliminal presentation of the aggressive stimulus would result in significantly less pathological activation than the subliminal presentation. Their prediction was confirmed for each of the measures that had previously shown activation effects, such as word association and story recall scores. These particular measures are considered to be indicators of pathological thinking, which is a primary symptom of schizophrenia.

The interpretation of Silverman and Spiro's (1968) findings is limited, however, due to the possibility of experimenter bias. Since the instructions given to the subjects varied depending upon whether the stimulus was to be shown subliminally or supraliminally, the experimenter was not blind to the type of exposure. This introduces the possibility of experimenter bias either while measuring or recording the subjects' responses. This criticism is most pertinent

to that measure which deals with pathological overt behavior. The authors acknowledge that this measure is most vulnerable to experimenter bias in the form of selective attention to certain responses. Two other measures of pathology (i.e. those measuring word association pathology and story pathology), however, were not as susceptible to this kind of bias since they are more direct measures and were not based on the attention of the experimenter. Subsequent studies (e.g. Silverman & Candell, 1970; cf. Silverman & Weinberger, 1985) have supported Silverman and Spiro's finding, thereby strengthening the conclusion that unconscious processes are a critical factor in the formation of psychopathology. This also gives support to Silverman's contention that subliminal activation is necessary to the study of unconscious processes and provides confirmation for the use of SPA in such studies. Subliminal presentation of a stimulus is intended to ensure that while the message registers on an unconscious level, the content of the message is kept out of conscious awareness.

A further consideration in the subliminal exposure of subjects to stimuli is the matter of "partial cues." This refers to the possibility that the subject is aware of some aspect of the stimuli, i.e. of the differences in the various stimuli being presented. With this partial awareness, the subject may be disposed to respond in accordance with the experimenter's expectations. In order to ensure that subjects are not somehow being given a "partial cue" to the stimulus, most of the earlier studies involved the administration of a "discrimination task" to each subject upon completion of the

experimental procedures. This consisted of asking the subjects to discriminate between tachistoscopic flashes of experimental and neutral stimuli. A pre-established criterion of 8 out of 10 correct responses was considered to be a nonchance performance. That is, if a subject was able to correctly discriminate between the stimuli on 8 out of 10 tries, there was a good possibility that the subject was indeed being given partial cues to the stimuli. In all of the studies in which this procedure was followed, the number of subjects who fell within this range of performance was small enough to be attributed to chance ($p<.01$, two-tailed test).

In addition, those subjects who had been able to discriminate were asked to identify what they had seen. None were able to accurately identify the content of the stimuli. Researchers have therefore concluded that results obtained after subliminal exposure to stimuli were not a function of partial cues. This full procedure has been discontinued in many studies on the basis of the precedence established in previous studies. These studies still include, however, a briefer version in which subjects are asked to identify the content of the stimuli that they had viewed during the experimental procedure. The same results are found, i.e. no partial cue effects have been observed.

In most of the literature to be discussed, the procedure employing the method described above was the same. The basic procedure consisted of the subliminal presentation of a neutral (baseline) stimulus, followed by initial (baseline) assessment of the

dependent variables, four exposures to the critical stimulus and critical assessment of the dependent variables. In the studies done with schizophrenics, in which a within-group design was used, the experimental and neutral (control) stimuli are presented in counterbalanced order in consecutive sessions. The number of sessions depends upon the number of stimuli being tested. This procedure is considered to qualify as "double-blind" since both the experimenter and the subjects are not aware of the order of the stimulus presentation. Additionally, the assessment procedures are carried out "blindly" (i.e. the rater was unaware of experimental condition).

As stated earlier, much of the research has been done with schizophrenic populations, with the method being extended to nonschizophrenic populations thereafter. Following in this pattern, then, the first part of this review will concentrate on the research done with schizophrenics, followed by that done with nonschizophrenics.

SPA Studies with Schizophrenics

What are the unconscious psychodynamic wishes and fantasies that Silverman claims to be activating by using the subliminal psychodynamic activation method? What is the theory on which the related hypotheses are based? The research addressing these questions can be divided into two major categories: that involving the intensification of psychopathological symptomatology and that involving the reduction of those symptoms. An examination of the measures used to determine these effects is important in order to

provide a clearer understanding of the specific effects of subliminal stimulation. Following this, each of these categories, along with the related theory and studies will be considered in turn.

Measures of Psychopathological Symptomatology

The "clinically sensitive instruments" used to assess the effects of subliminal stimulation are the bases upon which theoretical inferences are made. It is therefore important to examine the assessment procedures to see what it is they are intending to measure. As will be explained in the following sections, schizophrenic symptomatology is considered by some theorists to be evidence of a return to primary process thinking. This ego impairment is evidenced by feelings of depersonalization, archaic ways of thinking and speaking, hallucinations and delusions. In particular, SPA research with schizophrenics has focused on the organization and efficiency of the cognitive processes experienced during this regression to primary process thinking. These factors are operationalized as pathological thinking, as evidenced by peculiar verbalizations, autistic concepts, illogical reasoning, and pathological overt (non-verbal) behavior, as evidenced by inappropriate smiling/laughing, rocking, peculiar gestures, speech blocking (Silverman & Weinberger, 1985).

In an effort to measure the symptoms defined as pathological thinking, Silverman (1966) developed two measures: the story recall test and word association test. The story recall test consists of the subject listening to several short passages pre-recorded on a cassette tape. These stories are described as "brief narrative accounts of

some more or less bland event" (Spiro & Silverman, 1969, p. 578). No further description is found in the literature, so it is difficult to determine if these stories have any psychodynamic relevance. After listening to each story, the subject is asked to recall as much of the passage as possible. The responses are subsequently scored for ability to organize and accurately recall the contents of the story. Indicators of pathological thinking generally include errors, condensations, misinterpretations, illogical ideas, distortions and intrusions (i.e. material not in the original story). Additionally, the total length of the recall is taken into account when given a rating. This has the effect that for stories in which pathological thinking is equally evident, the shorter the total recall the higher the pathological rating. In each session, this recall assessment procedure is administered both before (baseline assessment) and after (critical assessment) the presentation of the stimulus. The difference between the scores from first to second administrations is used to assess the effect of the subliminally-presented stimulus on pathological thinking.

The second measure of pathological thinking used by Silverman is the word association test. For this measure, pathological thinking refers to loose, personal and clanging associations; failure to respond; repetitions of the stimulus word with no further verbalization; and multiword responses. A subject is asked to give his/her associations to a word. The examiner subsequently scores the responses on a 3-pt. scale reflecting the degree of the aforementioned

deviations. As with the story recall test, the effects of the subliminally-presented stimulus are assessed by the change score from baseline to critical assessment.

While administering the measures for pathological thinking, all instances of pathological overt (non-verbal) behavior are recorded. As indicated earlier, pathological overt behavior is defined as any inappropriate smiling/laughing, rocking, peculiar gestures and speech blocking (Silverman & Weinberger, 1985). Each observance of such behavior is recorded and subsequently assigned a weighted score, reflecting the presence and severity of such behavior. These weighted scores are summed and the differences of the sum of scores between baseline and critical assessment are obtained.

Although the measures of pathological thinking and pathological overt behavior were rated "blindly" (i.e. the rater was unaware of experimental condition) in all of the studies reviewed, each of these measures involves clinical judgments of manifest pathology. The interrater reliability provides an important measure of the objectivity of these judgments. Reported coefficients were in the following ranges: .72 to .98 for story recall; .92 to .95 for word association; and .85 to .96 for pathological overt behavior. These results support the conclusion that the clinical judgments are based upon objective criteria.

Despite high interrater reliability coefficients for word association, this measure has not been utilized in the majority of SPA studies. This omission is curious since there is no explanation given

in the available literature. It may be that story recall is thought to include those factors which were being tested in the word association test, making the word association test a redundant measure. Thus, the primary measure employed in determining the effects on pathological thinking is the story recall test. In fact, Silverman and his colleagues have since developed a scoring manual for this test, which subsequent researchers have utilized (e.g. Mendelsohn, 1981).

Another measure of change in pathological thinking is derived from responses to Rorschach cards. Although several researchers have employed this measure (Silverman & Silverman, 1964; Silverman & Candell, 1970; Silverman, Pettit, & Dunne, 1971; Silverman, Levinson, Mendelsohn, Ungaro, & Bronstein, 1975; Silverman, Bronstein, & Mendelsohn, 1976; Litwack, Wiedemann, & Yager, 1979), a detailed description of the measure is not included in the available literature. The brief description of this measure that is available mentions a scoring manual developed by Holt (1969) used to score responses to 4 or more Rorschach cards. A weighted score is given for each response. The measure of pathological thinking for each baseline and critical assessment is the sum of these weighted scores divided by the number of responses given. Interrater reliability for this measure ranges from .70 to .94. Since a copy of the manual was not available to this reviewer, its validity for assessing pathological thinking in SPA studies cannot be evaluated.

Other measures have been employed to assess such variables as

"aggressive imagery" (Litwack et al., 1979), "projection of aggression" (Silverman & Spiro, 1968), "body boundary intactness" (Silverman & Candell, 1970), "self-awareness" (Silverman, Spiro, Weisberg, & Candell, 1969), and "self-esteem" (Kaplan, Thornton, & Silverman, 1981). However, the primary measures used in the majority of SPA studies with schizophrenics have the been the story recall test and the test for pathological overt behavior. The most apparent shortcoming concerning each of these measures is the lack of reported validity. Interrater reliability coefficients appear to be generally acceptable, but none of the studies report any evidence of the validity of the measures used. That is, do these measures actually assess the elements of the theory that they are purported to assess? Are they really tapping into the theoretical processes that are being tested? The answers to these questions can be cautiously inferred in light of the studies already done. That is, since numerous studies have been done in which these measures have yielded results that are consistent with the theory (which will be examined shortly), we can infer (albeit cautiously) that there is something about these measures that is related to the theoretical propositions under investigation.

A more effective means of answering these questions would be to independently validate the measures. This could be accomplished by comparing the change scores on the same measures of two theoretically different clinical populations, such as neurotics and schizophrenics. If such a comparison results in significant differences in pathology change, then we could infer with more confidence that the measures

used are indeed assessing the elements of theory they are intending to measure. This would lend additional strength to the supportive findings of the studies to be reviewed. However, the limitations of the measures cited above must be kept in mind when examining the research utilizing the SPA method.

Intensification of Psychopathological Symptomatology

The psychoanalytic propositions regarding intrapsychic conflict and unconscious wishes provide the basis for the formulation of hypotheses concerning the intensification of psychopathological symptomatology. According to classical analytic theory, ego functions develop as a result of the infant's need to interact appropriately with the external world. Before the advent of these ego functions, the infant's needs are met through primary process functions of the id, which are alogical, reliant solely on internal data, and make no distinction between fantasy and reality. Since the infant has needs which cannot be met by fantasy alone (e.g. tension reduction), the ego is forced to become differentiated from the id and develops the secondary process capacities of perception, motility and "the ability to bind tension by countercathexis" (Fenichel, 1945, p. 34).

If this process of differentiation becomes disrupted or distorted, usually by pathological mothering, it remains incomplete or faulty. Thus, when conflict arises (i.e. when instinctual impulses are striving for discharge, but being blocked by feelings of guilt and fear), the ego processes are not strong enough to appropriately handle it. In the most extreme cases of incomplete or faulty differentiation

(e.g. schizophrenia) the person will, under intensified instinctual impulses, experience a severe regression to the original undifferentiated state of primary narcissism. Secondary process is thus severely impaired and the person experiences a "break with reality", returning to a predominance of primary process ("primary process ego pathology") (Fenichel, 1945). This is evidenced by feelings of depersonalization, archaic ways of thinking and speaking, hallucinations and delusions. In less severe instances of ego pathology, such as neuroses, the person will repress the conflict and substitute symptoms for the undesirable wishes (e.g. compulsions). Psychopathological symptomatology, then, is the expression of and effort to adjust to these unconscious conflictual wishes involving aggressive and libidinal drives (Freud, 1926/1959).

From the preceding theoretical formulations, Silverman reasoned that if pathological symptoms are truly the result of conflicting unconscious wishes, stimulation of aggressive wishes should intensify the instinctual drives and thereby increase such symptoms. The specific symptoms that this stimulation supposedly effects have been described earlier. Briefly, these include the organization and efficiency of the cognitive processes, which are operationalized as measures of pathological thinking and pathological overt (non-verbal) behavior. Pathological thinking is defined as any peculiar verbalizations, autistic concepts, and illogical reasoning; pathological overt behavior is defined as any inappropriate smiling/laughing, peculiar gestures and speech blocking (Silverman &

Weinberger, 1985). These symptoms are assessed by the use of such measures as story recall tasks, word association tasks, inkblot responses, and subjective observer ratings of behavior.

Several studies have been done to test the hypothesis that an aggressive stimulus will result in an increase of symptoms. In comparisons of aggressive and neutral stimuli, psychopathological symptomatology has increased only after the presentation of the aggressive stimulus. Silverman and Spiro (1968) compared the effect of an aggressive stimulus, consisting of a picture of a charging lion with its teeth bared, with a neutral stimulus, consisting of a picture of a "bland-looking bird." The aggressive stimulus was shown to have a significant effect on psychopathological symptomatology. That is, both pathological thinking and pathological overt behavior increased after the presentation of the aggressive stimulus in relation to the presentation of the neutral stimulus. These results replicated earlier findings (Silverman, 1966; Silverman & Spiro, 1967) which had shown that aggressive stimulation had significant effects on psychopathological symptomatology.

The above studies suggest that aggressive stimuli do have an intensifying effect on psychopathological symptomatology. However, in order to confirm the original hypothesis that intensification of pathology results from the presentation of <u>aggressive</u> stimuli, it is necessary to find out if other types of stimuli will produce the same effects. For example, what effects will libidinal, merging, anal, or incestuous stimuli have on such symptoms? Silverman et al. (1969)

studied the effects of aggressive, libidinal and merging stimuli. The stimuli consisted of: 1) aggressive - drawing of a man about to stab a woman, accompanied by the verbal message "DESTROY MOTHER"; 2) libidinal - drawing of a nude man and nude woman accompanied by the verbal message "FUCK A WOMAN"; and 3) merging - drawing of a man and woman standing together with the lines differentiating one figure from the other deleted, accompanied by the verbal message "MOMMY AND I ARE ONE." The results supported the findings of previous studies regarding the effects of the aggressive stimulus. Additionally, as anticipated, there was no change in pathology when subjects were exposed to the libidinal stimulus. The results concerning the merging stimulus were not as supportive as expected, however, since subjects showed only a marginally significant decrease in pathology. This unexpected finding will be addressed shortly. The weakness of this analysis is that each of the stimuli were compared with the neutral stimulus, rather than with the other experimental stimuli. That is, the aggressive stimulus was not directly compared with the libidinal and/or merging stimuli. Such a comparison could have strengthened the findings, while the lack of such comparative data weakens the authors' conclusion that "only aggressive stimulation increased pathological thinking" (p. 46).

The notion of stimulus specificity was further investigated in a study using aggressive, merging, anal and incestuous stimuli with four symptomatically different groups, including schizophrenics, homosexuals, depressives and stutterers (Silverman et al., 1976). It

was found that, for schizophrenics, only the aggressive stimulus, which was considered to be the "relevant" stimulus to schizophrenic pathology, produced the predicted effects of increase in pathological symptoms in relation to the neutral stimulus. This was compared with the incestuous stimulus, which was considered the relevant stimulus for homosexuals. For schizophrenics, this "irrelevant" stimulus produced effects that were, though in the pathological direction, nonsignificant in relation to the neutral stimulus. The authors concluded that "incestuous wishes. . .are incapable of affecting those symptoms under study here, most importantly the schizophrenic's thought disorder" (p.6-7). As in the previous study, the two experimental stimuli were not directly compared. Such a direct comparison would indicate whether the aggressive stimulus produced a significantly greater amount of increase in pathology than other experimental stimuli (i.e. incestuous, libidinal, merging).

A final comparison involving aggressive, "object loss", and neutral stimuli was done with schizophrenic subjects (Litwack et al., 1979). Each stimulus was presented three times to test post-stimulation effects in relation to position of presentation (early vs. late). The aggressive stimulus ("CANNIBAL EATS PERSON") produced intensifying effects which only approached significance ($p<.07$, two-tailed) on two of the three measures of pathology (subject aggression and pathological overt behavior). Further, these effects were evidenced only in the late position of presentation. The "object loss" stimulus ("I AM LOSING MOMMY"), which intended to assess the

effects of a threatened loss of a significant person in the subject's life, was predicted to have the same intensifying effects as the aggressive stimulus. This was supported for only one measure of pathology (pathological overt behavior) and only when presented in the late position. Once again, the experimental stimuli were compared only with the neutral stimulus ("MEN ARE TALKING" or "PEOPLE ARE WALKING") and not in relation to each other.

A reason suggested for the apparent failure of this study to support the findings of previous studies has been the difference in statistical analyses employed (Porterfield, 1983). Litwack et al. (1979) used multiple regression procedures in which p values were two-tailed. In studies conducted by Silverman and his colleagues, statistical analyses consisted of simple one-tailed t-test comparisons. Since the hypotheses in these latter studies were usually unidirectional, however, (i.e. only an increase or a decrease in pathology was being investigated) the use of one-tailed tests was appropriate. These studies resulted in significant findings at the $p<.05$ level (one-tailed), while the statistical analyses conducted by Litwack et al. (1979) resulted in findings which only approached significance at the $p<.07$ level (two-tailed). Since the latter study was investigating the bi-directional effects of the stimuli, such a test was appropriate for this data and can be compared to earlier data by dividing the significance level in half ($p<.035$). When interpreted in this light, the findings of Litwack et al. can be considered to be significant and do indeed replicate the findings of earlier studies

concerning the effects of aggressive stimulation on schizophrenic symptomatology.

The above studies provide support for the hypothesis that aggressive stimulation, in relation to neutral stimulation, intensifies psychopathological symptomatology in schizophrenics. In addition, there appears to be at least moderate support for the notion of stimulus specificity. That is, in measuring schizophrenic pathology, only the presentation of an aggressive stimulus, as opposed to incestuous or merging stimuli, results in an increase in pathological symptoms when compared to neutral stimuli. It is not clear, however, if an aggressive stimulus produces a significantly greater increase in pathology than other experimental stimuli. These findings provide at least inferential support for the psychoanalytic proposition that schizophrenic pathology is an outward expression of an internal conflict over aggressive wishes.

Reduction of Psychopathological Symptomatology

Whereas the intensification of psychopathological symptomatology could be explained in terms of the conflict model of classical analytic theory (e.g. Freud, 1926/1959; Fenichel, 1945), the reduction of pathology can best be understood in terms of the schizophrenic's object relations. According to this model, schizophrenic symptomatology is viewed as serving an adaptive, purposive function (Bak, 1954; Hartmann, 1953; Limentani, 1956; Searles, 1965). As seen in the previous section, schizophrenic symptomatology signifies a return to a stage of primary narcissism in which ego boundaries are

not clearly defined. During this stage, which Mahler (1968) calls symbiosis, the individual appears to be experiencing the kind of merging with mother that is a normal part of development in infants.

Symbiosis, according to Mahler, is a necessary prerequisite to the successful initiation of the separation-individuation process. Following the stage of normal autism, the infant experiences a stage of merging (symbiosis) with the mothering agent in which "the ´I´ is not yet differentiated from the ´not-I,´ and in which inside and outside are only gradually coming to be sensed as different" (Mahler, 1968, p. 9). A consequence of this symbiotic state is that the infant begins to see the mother´s presence as somehow involved in his or her sense of well-being. Thus, symbiosis becomes not only a stage-related necessity, but also a wish for the mother and ultimately an affective longing for the mother (Mahler, Pine, & Bergman, 1975). With adequate need-gratification, however, the infant begins to be able to recognize external reality beyond his symbiotic boundaries. This is the critical point of symbiosis.

To the extent that symbiosis was adequate, i.e. the mother was able was to provide relief from inner tension, safety and a viable sense of self, the infant is ready to begin differentiation and move beyond symbiosis. On the other hand, if this symbiotic relationship was not adequate, the infant enters the separation-individuation phase ill-prepared, if at all. As a result, the infant suffers from insufficient ego boundaries in which mental representations of self and others are merged to varying degrees. This diffusion of the self,

expressed through thought disorder and hallucinations, brings about a fear of total dissolution of the self. The resulting need to defend against merging and to maintain or restore ego boundaries is expressed by paranoid thinking, assaultiveness and withdrawal. Another consequence of this diffusion, however, may be the wish for a symbiotic-like state (Silverman et al., 1982). This wish can be seen as a defense against aggressive impulses, in which the "best way to control his fear and hostility [is] to feel at one with the person toward whom these feelings would have been directed" (Limentani, 1956, p. 31). It can also be seen as a return to the need-gratifying symbiotic state (Silverman et al., 1982) or as an attempt to avoid separation anxiety and the experience of being alone in a hostile and threatening world (Mahler, 1979). If these unconscious wishes for a symbiotic-like state are gratified, it is hypothesized that the person would no longer have the need for the symptoms. Consequently, stimulation of symbiotic-like fantasies should provide gratification for such wishes and thus produce a decrease in psychopathological symptomatology.

According to the above theory one would expect to find a significant decrease in pathology following activation of merging fantasies. Thus, the unanticipated findings of Silverman et al. (1969) (cf. p. 12) in which subjects showed only a marginally significant decrease in pathology were difficult to understand and required further investigation. Perhaps there were different levels of merging already being experienced by the subjects which would

result in their differential response to the merging stimulus. A post hoc analysis of the data revealed that the extent to which a subject already viewed himself as merged with "Mommy" (as determined by a self-object differentiating rating scale) was a factor in the effect that the merging stimulus had on psychopathological symptomatology. Specifically, if a subject viewed himself as merged, his level of pathology did not decrease after exposure to the merging stimulus - in fact, it increased. Those who viewed themselves as more differentiated from "Mommy" showed a decrease in pathology after this stimulus. Actually, this finding makes sense in light of the above theory. While some schizophrenics have a wish to merge in order to return to a more safe and gratifying state, as well as to mitigate aggressive impulses, others appear to be defending against a wish to merge for fear of threat to and subsequent loss of the object and total dissolution of the already precarious self. Thus, stimulation of merging fantasies would elicit a defensive increase in pathological symptomatology.

The level of self-object differentiation experienced by schizophrenics in relation to mother that was so crucial in the above research was assessed by a measure developed by Silverman et al. (1969). The measure, later known as the Adjective Rating Scale (ARS), consists of 20 descriptive adjectives (e.g. energetic, kindly, optimistic, irritable, worthless, honest, etc.). The subject rates himself on a 6-pt. Likert-type scale according to how closely the adjectives apply to him. Subsequently, the subject is shown a picture

of an elderly woman, intended as a "mother figure" and is asked to rate the woman on the basis of what she looks like in the picture. Silverman and his colleagues reasoned that since the woman in the picture was "neutral-looking" and thus could not elicit trait inferences, the degree to which the ratings of the self and the picture were similar signified the degree to which the subject viewed himself as undifferentiated from mother. That is, the degree of differentiation from mother is reflected by the sum of the differences of the subject´s self ratings and the ratings of the picture. The actual "neutrality" of the picture and its assumed inability to elicit trait inferences from the subjects has not been addressed in the available literature. Thus, it is difficult to know with certainty that the subjects´ ratings of the picture were indeed projections of his perceived level of differentiation with mother.

Most of the subsequent studies involving schizophrenics have utilized this measure to screen subjects to include only those for whom the merging stimulus would be ameliorative and thus relevant to the hypotheses being tested. One study (Fribourg, 1981), however, included both relatively undifferentiated and differentiated schizophrenics in an effort to investigate the effect of a subliminal enhancement procedure in conjunction with the presentation of the merging stimulus. The "subliminal enhancement procedure" consisted of a picture of a smiling mother holding a contented baby accompanied by the verbal message "MOMMY GIVES ME EVERYTHING." This was intended to enhance the positive attributes of the schizophrenic´s maternal

representations. The specific hypothesis was that "enhancing the positive attributes of the schizophrenic's image of his mother prior to stimulating a fantasy of a symbiotic merger might increase his ability to benefit from the subliminal symbiotic stimulus" (p. 337). This hypothesis was not supported. Although the merging stimulus presented alone did produce ameliorative effects in differentiated subjects, the combined presentation of the merging stimulus and the enhancement procedure did not result in such effects in either the differentiated or undifferentiated subjects. An additional interesting finding was that the subliminal enhancement procedure presented alone resulted in reductions in pathological behavior for both groups. That is, while the enhancement procedure did not produce the desired results, it did appear to produce ameliorative effects in its own right. A possible explanation for the failure of the specifically enhancing characteristics of the combined presentation may be that it elicited too much merging, which may have posed a threat to the precarious self boundaries even among the relatively differentiated schizophrenics.

The findings that merging stimuli temporarily diminish pathology appear to be at least partially supported by additional studies (Mendelsohn, 1981; Bronstein & Rodin, 1983; Jackson, 1983; Kaplan et al., 1985). That is, on at least one of several measures of pathology, there was a decrease in psychopathological symptomatology that was either significant or approached significance after the presentation of the merging stimulus. Also, there appears to be some

evidence that the particular wording of the stimulus is a significant factor in its particular effect. Bronstein and Rodin (1983) used 4 variations of merging stimuli: 1) MOMMY AND I ARE ONE, 2) MOMMY AND I ARE THE SAME, 3) MOMMY IS INSIDE ME and 4) MOMMY AND I ARE ALIKE. Only the first variation, the one used in previous research to activate merging fantasies, produced ameliorative effects. More recently, Kaplan et al. (1985) attempted to test the specificity of need gratification by varying the content of the stimuli to activate different wishes (i.e. symbiosis - MOMMY AND I ARE ONE; oral gratification - MOMMY FEEDS ME WELL; separation - MOMMY IS ALWAYS WITH ME; and safety from hurting "Mommy" - I CANNOT HURT MOMMY). Again, only the symbiosis fantasy produced significant ameliorative effects.

The foregoing studies seem to indicate that only a stimulus which is intended to activate merging fantasies will reduce pathology. How can this be explained? What happens intrapsychically as a result of the presentation of this stimulus? The question of the need for a specific stimulus was the focus of a study conducted by Silverman et al. (1971) in which the ARS was administered both at baseline and critical assessment. The intent was to find out if there was a difference in the subjects' level of self-object differentiation after the presentation of the merging stimulus in relation to initial levels. They found that there was indeed a difference, viz. the level of self-object differentiation as reported by the subjects was <u>less</u> after the presentation of the merging stimulus. That is, the subjects saw themselves as being in a more symbiotic-like state with mother

after the presentation of such a stimulus. Further, the authors found a significant positive correlation between measured pathological symptomatology and level of self-object differentiation. The subliminal presentation of a merging stimulus, then, appears to have resulted in at least a partial gratification of merging fantasies, resulting in a decreased need for the pathological symptoms which had previously substituted for this wish for merger. This not only provides support for SPA, but also inferential support for the psychodynamic proposition concerning the schizophrenic's wish for a return to a symbiotic-like state.

We have observed in the preceding studies that only a stimulus which is intended to activate and thereby gratify merging fantasies will reduce pathology. How, then, do we make sense of Mendelsohn's (1981) findings that a "twoness" stimulus produced significantly greater reductions in pathology than the merging stimulus? That is, although the merging stimulus did produce ameliorative effects, the stimulus "MOMMY AND I ARE TWO" produced an even greater level of reduction in measures of pathology. Mendelsohn (1981) explains this finding in terms of the relative safety of the two stimuli. He attributes the greater ameliorative effects of the "twoness" stimulus to the activation of "a fantasy of a close, positively experienced connection with mother while simultaneously safeguarding and enhancing self-boundaries" (p. 586). A post hoc examination of subjects' associations to the stimuli revealed that the positive associations to each of the stimuli were about the same, while negative associations

to the "twoness" stimulus were less than those to the merging stimulus. Additionally, there were some references to merging in the associations to the "twoness" stimulus. Thus, the "twoness" stimulus appears to have the effect of providing the important need-gratifications of the merging stimulus, while at the same time protecting the subject from the dangers of loss of the primary relationship and annihilation of the self through too much merging. It appears to take into account the schizophrenic´s "need-fear dilemma", i.e. both the need to merge and the simultaneous fear of merging. This points out the potential importance of not merely providing stimuli that activate merging fantasies, but those that also reassure against boundary loss.

Jackson (1983) shed further light on the specificity of the merging stimulus. Until his study, the majority of the research had been done with male schizophrenics. Jackson, however, included both male and female schizophrenics, finding that the usual "MOMMY AND I ARE ONE" stimulus did not produce the same ameliorative effects in females as it did with males. On the other hand, changing the stimulus to "DADDY AND I ARE ONE" did produce such effects in females, but not in males. The theoretical explanation offered for these results was that females in general are less differentiated from "Mommy" than males and are thus more threatened with dissolution of the self by a merging stimulus involving "Mommy". The "Daddy" stimulus poses less threat, while still providing oneness gratification. Regarding males, the use of the word "Daddy" may have

incestuous-homosexual overtones. Also, the father may represent the beginning of the separation-individuation process, which may be a threat to the tenuous symbiosis that schizophrenics are considered to have with mother. Thus, the "Daddy" stimulus would pose a threat to male schizophrenics which would result in an increase in pathology as a means of expressing and defending against that threat. Jackson's results replicate separate findings with male and female schizophrenics done by Kaye (1975) and Cohen (1977), respectively.

The preceding investigations of the effects of merging stimuli has shown that two factors appear to be important: level of differentiation from mother and sex of subjects. Still another factor appears to have an effect on the results of such stimulation: the use of the word "mommy" during subjects' childhood. Silverman and Weinberger (1985) found that administering the merging stimulus ("MOMMY AND I ARE ONE") to hospitalized schizophrenics in Virginia failed to produce the ameliorative effects found in studies with New York schizophrenics with whom the majority of the other studies were done. The explanation offered for this failure was the observation that children in this southern section of the country do not use the word "mommy", but instead use "mama." This explanation, however, must remain conjectural since no additional studies substituting the word "mama" for "mommy" in the merging stimulus have been done.

The above examination of types of stimuli used to activate unconscious wishes and fantasies indicates that, with schizophrenic populations, aggressive stimuli result in an increase in pathology,

apparently in an attempt to express and defend against an increase in conflict. On the other hand, symbiotic stimuli result in a decrease in pathology, whether as a result of a partial resolution of conflict or a gratifying of the wish to return to an earlier need-gratifying state. Additionally, specificity appears to be a factor. That is, only those stimuli specifically intended to activate merging fantasies produce ameliorative effects, with differential effects produced between male and female schizophrenics. Another aspect of specificity appears to be the particular wording of the stimulus. That is, the stimulus must consist of words that are meaningful to the subject. Finally, an important qualifier in relation to the use of the merging stimulus is the simultaneous need to safeguard and strengthen self boundaries.

The review of the SPA literature up to this point appears to support the effectiveness of this method with schizophrenic subjects. The psychoanalytic propositions concerning unconscious conflict over aggressive impulses and symbiotic fantasies in schizophrenics have been at least inferentially supported. Having examined the measures and stimuli used in the SPA methodology with schizophrenics, the broader use of SPA with nonschizophrenic populations can now be considered.

SPA Studies with Nonschizophrenics

These encouraging findings cited above, particularly concerning the merging stimulus, led researchers to suggest that perhaps the ameliorative effects of the subliminal presentation of a stimulus

designed to evoke merging fantasies are not limited to schizophrenics (e.g. Silverman, Kwawer, Wolitzky, & Coron, 1973; Silverman, Frank, & Dachinger, 1974). Perhaps, as Mahler et al. (1975) have suggested, nonschizophrenic manifestations of psychopathology are a result of symbiotic-like wishes that have been carried over from childhood. As with schizophrenics, then, gratification of these wishes should result in a decrease of their particular manifestation of psychopathological symptomatology.

Nonschizophrenic populations evidence their symptomatology in the form of various kinds of maladaptive behaviors. Thus, the common hypothesis of the studies with nonschizophrenics is that the subliminal presentation of the "MOMMY AND I ARE ONE" stimulus will produce adaptive changes in behavior. Since the primary investigation of the SPA method as a useful tool in testing psychoanalytic propositions has been done in the previous sections of this review, the following will be only a brief look at broader uses of the method. This will include both investigations of theoretical propositions and the clinical applications of SPA with nonschizophrenics.

Theoretical Investigations of SPA

The SPA methodology in studies with nonschizophrenics is very similar to that used with schizophrenics. However, it does differ slightly in that a between-subjects design is primarily used in which subjects are randomly assigned to either experimental or control group. Presentation of the stimuli is done over several days in order to determine the effects of "dosage" on the desired behavior change.

That is, an increased amount of subliminal stimulation of merging fantasies may produce greater levels of behavior change in the desired direction.

In a study with depressed college women, Dauber (1984) found that, as with schizophrenics, not all depressives respond in the same manner to subliminal stimuli. That is, those whose depression is identified as "introjective" (i.e. guilt related) reported an intensification of their depression following a stimulus designed to induce guilt ("LEAVING MOM IS WRONG"). The merging stimulus ("MOMMY AND I ARE ONE") did not produce the anticipated decrease in depression. Since the subjects were females, the lack of differences may have been due to the similar, sex-related effect seen in schizophrenics' responsiveness to a merging stimulus (Jackson, 1983). Perhaps a more relevant stimulus would have been "DADDY AND I ARE ONE" rather than "MOMMY AND I ARE ONE" (cf. p. 28).

Additionally, in an attempt to provide a model of a simple and clinically-relevant research paradigm to test other psychoanalytic propositions, another group of studies involving the stimulation of oedipal fantasies has been done (e.g. Silverman, Ross, Adler, & Lustig, 1978; Heilbrun, 1982; Haspel & Harris, 1982). These have been done with college males and have used outcome measures of dart-throwing accuracy in competition. Oedipal fantasies are theoretically considered to involve conflict over competition with father for mother's affections. Thus, a competitive situation in which competition with father is either sanctioned ("BEATING DAD IS OKAY")

or condemned ("BEATING DAD IS WRONG") was hypothesized to enhance or impede accuracy, respectively. The results of these studies have been mixed. That is, the stimuli assumed to effect unconscious oedipal conflict, while producing some supportive results, have not been compared with other types of stimuli. Thus, it is not clear if the effects obtained are truly a result of the supposedly oedipal elements of the stimuli or if some other factor could account for the results.

Other psychoanalytic propositions have been investigated using symptomatically different groups of subjects. Male homosexuals evidenced a significant increase in their homosexual orientation after having been exposed to a stimulus suggesting incestuous content, but no such increase when shown an aggressive stimulus (Silverman et al., 1973; Silverman et al., 1976). Stutterers manifested a significant increase in their speech pathology when exposed to an anal stimulus, but not when exposed to an incestuous stimulus (Silverman, Klinger, Lustbader, Farrell, & Martin, 1972; Silverman et al., 1976). These studies, while susceptible to similar limitations in assessment procedures as those with schizophrenics, suggest that particular forms of pathology respond to different types of subliminal stimuli. Thus, they lend support to the specificity of psychoanalytic propositions regarding these pathologies.

Clinical Investigations of SPA

Having obtained ameliorative effects as a result of subliminal merging stimulation with schizophrenics, the clinical application of the SPA method was investigated. Thus, additional studies were done

using this method as an adjunct to the treatment of subjects who wanted to change a particular problematic behavior. In these studies, the experimental group received a subliminal merging stimulus, while the control group received a neutral stimulus, each in addition to the respective treatment. For example, in a study in which the goal was to decrease smoking (Palmatier & Bronstein, 1980), the "MOMMY AND I ARE ONE" stimulus was used as a adjunct to a behavioral treatment program. The subjects who received the merging stimulus (experimental group) in addition to the behavioral treatment evidenced a significant differential effect in their smoking behavior at 4 and 12 week posttreatment follow-up when compared to the control group who received only the behavioral treatment with a neutral stimulus ($t[26]=2.23$, $p<.05$, $t[26]=3.82$, $p<.05$, respectively).

Similar supportive findings were obtained in SPA studies with obese women using SPA as an adjunct to a behavioral program (Silverman, Martin, Ungaro, & Mendelsohn, 1978), insect phobics treated by systematic desensitization (Silverman et al, 1974), the self disclosures of college students in group therapy (Linehan & O'Toole, 1982), and emotionally disturbed adolescents receiving psychotherapy in a residential treatment center (Bryant-Tuckett & Silverman, 1984). In each of these studies, the experimental group showed statistically significant differential effects in adaptive behavior after subliminal stimulation when compared to the control group. The presentation of a merging stimulus is thus seen as underlying or facilitating the process of these other modes of

treatment.

Conclusions drawn on the basis of the above studies, however, must be tempered by an examination of the methodology employed. Specifically, some of the studies cited above make no reference to any reliability data (Palmatier & Bornstein, 1980; Silverman et al., 1974; Silverman et al., 1978) and none refer to any validity data of the outcome measures used. Thus, we are presented with the same difficulties in interpreting the results of these studies as in the studies with schizophrenics. That is, we do not know if the measures are assessing what they are purporting to assess. In some of the studies with nonschizophrenics, we do not even know if the measures reliably assess what they are supposed to be assessing. On the other hand, the ability of this method to produce effects on adaptive behavior in a theoretically consistent manner over studies with several different types of populations provides some evidence for the validity of SPA.

There are additional studies which appear to be immune to the above types of criticisms regarding outcome measures. Parker (1982) studied the effects of a merging stimulus on the academic performance of college students. In addition to the "MOMMY AND I ARE ONE" stimulus, a modified merging stimulus that was assumed to be more relevant to this subject population was used with a second experimental group: "MY PROF AND I ARE ONE." Subjects were all students in an undergraduate law course. There were no significant differences between the 3 groups on the factors of grade point

average, sex race, and class standing. Both experimental groups earned significantly higher grades on the final examination (outcome measure) than did the control group, who received a neutral stimulus. These results are partially similar to those obtained in a study of Israeli high school students (Ariam & Siller, 1982), in which the phrase "MOMMY AND I ARE ONE" was translated both literally and idiomatically. Subjects in both of these groups achieved higher scores on achievement tests administered 6 weeks apart than subjects in the control group. However, subjects receiving the stimulus "MY TEACHER AND I ARE ONE" did not show any significant difference in achievement test scores than did the control group subjects. This study is significant because of the cross-cultural implications of the psychoanalytic propositions relating to merging fantasies. That is, the adaptation-enhancing effect of subliminal stimulation of merging fantasies appears to be a general human phenomenon.

This brief examination of SPA studies with nonschizophrenic populations lends further support to the use of the SPA method to investigate various psychoanalytic propositions. Also, although certain methodological weaknesses must be taken into consideration when drawing conclusions based on these studies (viz., measures), it appears that the SPA method may be a useful tool in the treatment of various psychological and behavioral disorders. The findings of the aforementioned studies certainly have implications for psychoanalytic theory and the clinical application of such theory. These implications will now be considered.

Implications of SPA

The preceding discussion of the subliminal psychodynamic activation method has sought to critically examine the claim by Silverman and other researchers that this method is useful in investigating various psychoanalytic propositions. As has been seen, the findings of the studies cited herein, though sometimes mixed and accompanied by certain limitations in interpretation, have been generally supportive of the tested hypotheses. These findings raise additional questions as to their implications for the particular elements of theory to which they relate and to the relevance of these findings to treatment. These questions can now be addressed in turn.

Theoretical Implications of SPA

As indicated earlier, classical analytic theory holds that psychopathological symptomatology is the expression of and effort to adjust to unconscious conflictual wishes involving aggressive and libidinal drives. Further, these conflictual wishes are considered to be specific to certain forms of psychopathology. That is, there is a specific wish or fantasy that is most relevant to particular manifestations of psychopathology. In the studies with schizophrenics, it was seen that intensification of such symptomatology occurred with the subliminal presentation of a stimulus which was intended to activate aggressive wishes. Additionally, only aggressive stimulation produced this effect in relation to a neutral stimulus. Studies of other forms of psychopathology, such as homosexuality and stuttering, responded similarly to stimuli intended

to activate other types of unconscious wishes and fantasies (viz. incestuous and anal stimuli, respectively). They did not, however, respond with a significant increase in their symptoms when presented with the aggressive stimulus. Thus, the theoretical proposition that manifest pathology is the result of an unconscious conflict concerning specific wishes appears to be at least inferentially supported.

Another psychoanalytic proposition which is central to much of psychoanalytic theory is that the conflict leading to the formation of psychopathology is unconscious, i.e. it is out of the person's conscious awareness. The studies in which stimuli were presented both subliminally and supraliminally have given strong support to this proposition. On the basis of this support, then, the unconscious nature of psychoanalytic propositions can no longer be considered as just a fanciful musing, but deserves more serious consideration as to its role in the formation of psychopathology.

The research concerning theoretical propositions that relate to the reduction of symptomatology appears to be similarly supportive. That is, the subliminal presentation of a stimulus intended to activate merging fantasies results in a reduction of pathological symptomatology in schizophrenics, as predicted from the theory. In addition, the subliminal presentation of such stimuli appear to <u>enhance</u> the desired results in various forms of treatment with symptomatically different groups of subjects. One of the implications of this is that merging fantasies may be a factor in various forms of

psychopathology, not just schizophrenics. This is consistent with the contention of Mahler et al. (1975) that manifestations of psychopathology in nonschizophrenics are a result of symbiotic-like wishes that have been carried over from childhood. The repeated phenomenon of the relationship between merging fantasies and various forms of psychopathology appears to further highlight the crucial nature of the symbiotic stage of development.

On the other hand, one could argue that such a repeated occurrence among varied forms of psychopathology may indicate that some other factor may be responsible for the adaptive results. The matter of lack of validity data for the measures of psychopathological symptomatology could be called into play here. Specifically, since no such data is reported in these studies, we cannot say with certainty that what is being measured is indeed related to the theoretical propositions under investigation. Even given this limitation, however, this is a difficult argument to substantiate since, of the various stimuli presented, only the merging stimulus produced the predicted results.

In addition to lending support to various psychoanalytic propositions, the findings of the research cited above seem to add further clarification to the processes underlying psychopathology. That is, such factors as specificity of the stimulus, level of self-object differentiation, sex of subject and relevance of stimulus to the subject's experience all have an effect on the poststimulation results. Not all subjects respond to exactly the same stimulus in

precisely the same manner. Thus, when looking at any particular manifestation of psychopathology in light of psychoanalytic theory, one must take into consideration more than just the specific theoretical propositions as they have been thus far defined in relation to that pathology.

Support for the psychoanalytic propositions cited above can only be inferential since, although the predicted results do occur, we do not know for sure what is taking place intrapsychically when the various stimuli are presented. That is, while the SPA method does produce the anticipated effects on symptomatology, the question of whether instinctual drives are being intensified or unconscious wishes are being gratified, or if there is some other explanation for the results, cannot be answered clearly on the basis of the current research. The theory offered to explain the obtained results focuses on instinctual drives and wishes, with no apparent distinction made between wishes and fantasies. Such a differentiation may consist of defining wishes, as seen in classical analytic theory, as an element of instinctual drives. Fantasies, on the other hand, can be seen as consisting of mental representations of those wishes, but they extend even further to include the object relatedness aspect of those wishes. That is, fantasies relate more to need for relationship than to purely instinctual drives. Thus, a possible alternative explanation for the obtained results is that the subliminal stimulation is not necessarily intensifying or gratifying <u>instinctual</u> drives or wishes, but is instead gratifying the <u>fantasy</u> of a wish for relationship. This

distinction would focus more on object relations theory than on classical analytic theory.

Clinical Implications of SPA

The question that logically follows from the foregoing investigation of the SPA method is: What is the relevance of SPA for clinical practice? This question can be addressed from at least two perspectives. The most obvious approach is the actual use of SPA in treatment. This has been seen in the studies in which SPA has been used as an adjunct to various forms of treatment. If people suffering from symptomatically different forms of psychopathology each respond to merging stimuli in an adaptive manner, as the preceding section indicates, it follows that this method is applicable to various treatment groups. Also, since adaptive effects have been observed in such varied forms of treatment as behavior modification and group therapy, it is apparent that the use of this method is not limited to psychoanalytic or psychodynamically-oriented psychotherapy.

Since the ameliorative and adaptation-enhancing effects of SPA have been seen in various forms of treatment, the question is raised as to the reason for the broad basis of these effects. Is there a common denominator which would explain the effects observed? The most obvious answer is yes -- the common denominator is the particular fantasy or wish activated by the SPA method, i.e. the wish for a symbiotic-like state. On the basis of this answer, Silverman and Lachmann (1985) suggest that one of the curative factors in all forms of psychotherapy is the unconscious activation of this fantasy. This

activation, though not always the result of the actual use of the SPA method, may be the result of the interaction between the client and therapist. They contend that certain elements of this interaction are analogous to the subliminally-presented "MOMMY AND I ARE ONE" stimulus. Specifically, the therapist´s "empathic responses" are the most frequent "stimuli" that activate the fantasy of merging with an idealized self-object. According to these authors, such an empathic response, "when it is accurate, allows the patient to feel that the [therapist] is sharing his or her experience, thereby allowing the patient to perceive the [therapist] unconsciously as the ideal ´symbiotic mother´" (p. 109). In addition, such qualities in a therapist as understanding, unqualified acceptance and a sense of helpfulness can activate these merging fantasies.

Although this is an interesting postulate, it certainly requires further investigation. Other writers have pointed out the inherent problems of this suggested clinical implication. For example, Shapiro (1985) points out a critical difference between the "MOMMY AND I ARE ONE" stimulus and the empathic responses of the therapist. He indicates that the therapist´s responses are verbal and therefore consciously heard by the client. Since the merging stimulus is presented subliminally, it addresses a different level of awareness than the responses of the therapist. While this objection does not preclude the possibility that there is some quality in the therapist´s empathic responses that activates unconscious merging fantasies, it does focus on the need for further research into this potential

clinical implication.

Finally, the SPA research indicates that care must be taken in relation to the safety of subliminal stimulation. That is, in order for the attempted stimulation of unconscious fantasies to be effective (i.e. produce ameliorative and/or adaptation-enhancing effects), it must also safeguard the client's ego boundaries against the threat of potential total dissolution. If this is not taken into account, the results could prove to be in the opposite direction of those desired.

Summary

Over the last 20 yrs., Silverman and other researchers have attempted to investigate various psychoanalytic propositions by the use of the subliminal psychodynamic activation method. In recent years, however, this method has been criticized for several perceived methodological weaknesses, such as selection of subjects, choice of statistical methods and measures of dependent variables. Those who have levelled these criticisms have called into question the effectiveness of the SPA method in testing psychoanalytic propositions. This review has sought to critically examine the SPA method in order to determine the validity of these criticisms.

In this examination, some methodological weaknesses have been noted. Primarily, these weaknesses relate to the measures used to assess the effects of subliminal stimulation on psychopathological symptomatology. Specifically, in studies with both schizophrenic and nonschizophrenic populations, no validity data was reported in the literature for any of the measures employed. This leads to the

question of whether these measures were actually tapping into the theoretical processes that were being tested. Although an affirmative answer to this question can be inferred on the basis of repeated supportive results, an independent effort to provide such data would allow for increased confidence in drawing conclusions based on the research. A suggested means of conducting such an independent effort consists of comparing the change scores of two theoretically different clinical populations (e.g. neurotics and schizophrenics), obtained by the same measures. Construct validity of the measures in question would consist of significant differences in pathology change.

Another noted weakness was the failure to compare the results of experimental stimuli with those of other experimental stimuli. The results of each experimental stimulus was compared only with the results of the neutral stimulus. While this comparison of experimental to neutral stimuli did demonstrate the absolute effects of subliminal stimulation, a direct comparison of the results of experimental stimuli may provide additional data concerning the differential effects obtained as a result of each experimental stimulus. That is, it may indicate whether one experimental stimulus produces a significantly greater amount of change (either increase or decrease) in pathology than other experimental stimuli. This indicates yet another possibility in the future research utilizing this method.

Even with these limitations, the subliminal psychodynamic activation method has provided both theorists and clinicians with some

interesting and useful material to consider in their study and treatment of psychopathology. It has been demonstrated as effective in producing changes in the symptomatology of a wide variety of diagnostic groups, such as schizophrenics, smokers, homosexuals, insect phobics and stutterers. It has also been shown to produce adaptive effects in nonclinical groups, e.g. students. This broad applicability of the SPA method has some interesting implications for both theory and clinical practice. These include at least inferential support for the conflict model of psychopathology, added support for the viability of unconscious processes, and a possibly clearer understanding of the curative factors in psychotherapy. Additionally, the SPA method has further demonstrated the importance of the unconscious nature of intrapsychic processes. Despite its current limitations, then, it is the opinion of this reviewer that the SPA method has demonstrated at least the plausibility of employing psychoanalytic constructs to explain psychopathology in its various forms, as it was designed to do.

REFERENCES

Ariam, S., & Siller, J. (1982). Effects of subliminal oneness stimuli in Hebrew on academic performance of Israeli high school students: Further evidence of the adaptation-enhancing effects of symbiotic fantasies in another culture using another language. Journal of Abnormal Psychology, 91, 343-349.

Bak, R.C. (1954). The schizophrenic defense against aggression. International Journal of Psychoanalysis, 35, 129-134.

Bronstein, A., & Rodin, G. (1983). An experimental study of internalization fantasies in schizophrenic men. Psychotherapy: Theory, Research and Practice, 20, 408-416.

Bryant-Tuckett, R., & Silverman, L.H. (1984). Effects of the subliminal stimulation of symbiotic fantasies on the academic performance of emotionally handicapped students. Journal of Counseling Psychology, 31, 295-305.

Cohen, R. (1977). The effects of four subliminally introduced merging stimuli on the psychopathology of schizophrenic women (Doctoral dissertation, Columbia University, 1977), Dissertation Abstracts International, 38, 2356B.

Condon, T., & Allen, G.J. (1980). Role of psychoanalytic merging fantasies in systematic desensitization: A rigorous methodological examination. Journal of Abnormal Psychology, 89, 437-443.

Dauber, R.B. (1984). Subliminal psychodynamic activation in depression: On the role of autonomy issues in depressed college women. Journal of Abnormal Psychology, 93, 9-18.

Dixon, N.F. (1971). Subliminal perception: The nature of a controversy. London: McGraw-Hill.

Fenichel, O. (1945). The psychoanalytic theory of neurosis. New York: W.W. Norton & Co., Inc.

Freud, S. (1959). Inhibitions, symptoms and anxiety (J. Strachey, Trans.). New York: W.W. Norton & Co., Inc. (Original work published 1926)

Fribourg, A. (1981). Ego pathology in schizophrenia and fantasies of merging with the good mother. Journal of Nervous and Mental Disease, 169, 337-347.

Hartmann, H. (1953). Contribution to the metapsychology of schizophrenia. Psychoanalytic Study of the Child, 8, 177-197.

Haspel, K.C., & Harris, R.S. (1982). Effect of tachistoscopic stimulation of subconscious oedipal wishes on competitive performance: A failure to replicate. Journal of Abnormal Psychology, 91, 439-443.

Heilbrun, K.S. (1980). Silverman's subliminal psychodynamic activation: A failure to replicate. Journal of Abnormal Psychology, 89, 560-566.

Jackson, J. (1983). The effects of subliminally activated fantasies of merger with each parent on the pathology of male and female schizophrenics. Journal of Nervous and Mental Disease, 171, 280-289.

Kaplan, R., Thornton, P., & Silverman, L.H. (1985). Further data on the effects of subliminal symbiotic stimulation on schizophrenics. Journal of Nervous and Mental Disease, 173, 658-666.

Kaye, M. (1975). The therapeutic value of three merging stimuli for male schizophrenics (Doctoral dissertation, Yeshiva University, 1975). Dissertation Abstracts International, 36, 1438B.

Limentani, D. (1956). Symbiotic identification in schizophrenia. Psychiatry, 19, 231-236.

Linehan, E., & O'Toole, J. (1982). The effect of subliminal stimulation of symbiotic fantasy on college students' self-disclosures in group counseling. Journal of Counseling Psychology, 29, 151-157.

Litwack, T.R., Wiedemann, C.F., & Yager, J. (1979). The fear of object loss, responsiveness to subliminal stimuli, and schizophrenic pathology. Journal of Nervous and Mental Disease, 167, 79-90.

Mahler, M.S. (1968). On human symbiosis and the vicissitudes of individuation. New York: International Universities Press.

Mahler, M.S., Pine, F., & Bergman, A. (1975). The psychological birth of the human infant. New York: Basic Books.

Mahler, M.S. (1979). The selected papers of Margaret S. Mahler, M.D.: Infantile psychosis and early contributions. Vol. I, New York: Aronson.

Mendelsohn, E. (1981). The effects of stimulating symbiotic fantasies

on manifest pathology in schizophrenics: A revised formulation. Journal of Nervous and Mental Disease, 169, 580-590.

Oliver, J.M., & Burkham, R. (1982). Subliminal psychodynamic activation in depression: A failure to replicate. Journal of Abnormal Psychology, 91, 337-342.

Palmatier, J.R., & Bornstein, P.H. (1980). The effects of subliminal stimulation of symbiotic merging fantasies on behavioral treatment of smokers. Journal of Nervous and Mental Disease, 168, 715-720.

Parker, K.A. (1982). The effects of subliminal symbiotic stimulation on academic performance. Journal of Counseling Psychology, 29, 19-28.

Porterfield, A.L. (1983). The effects of subliminal aggressive and "merging" stimuli on the cognitive functioning of schizophrenics: A failure of Silverman's subliminal psychodynamic activation. (Doctoral dissertation, University of Illinois at Urbana-Champaign, IL., 1983), Dissertation Abstracts International, 45, 362B.

Searles, H.F. (1965). Collected papers on schizophrenia and related subjects. New York: International University Press.

Shapiro, R.B. (1985). The therapeutic properties of unconscious oneness fantasies: Discussion. Contemporary Psychoanalysis, 21(1), 115-119.

Silverman, L.H. (1966). A technique for the study of psychodynamic relationships: The effects of subliminally presented aggressive stimuli on the production of pathological thinking in a schizophrenic population. Journal of Consulting Psychology, 30, 103-111.

Silverman, L.H. (1967). An experimental approach to the study of dynamic propositions in psychoanalysis: The relationship between the aggressive drive and ego repression - initial studies. Journal of the American Psychoanalytic Association, 15, 376-403.

Silverman, L.H. (1976). Psychoanalytic theory: "The reports of my death are greatly exaggerated." American Psychologist, 31, 621-637.

Silverman, L.H. (1983). The subliminal psychodynamic activation method: Overview and comprehensive listing of studies. In J. Masling (Ed.), Empirical Studies of Psychoanalytic Theories, (Vol. 1, pp. 69-100). Hillsboro, NJ: Erlbaum.

Silverman, L.H. (in press). The subliminal psychodynamic activation method: Comprehensive listing update, individual differences, and

other considerations. In U. Hentschel, G. Smith, & J. Dragon (Eds.), The Roots of Perception. Amsterdam: Elsevier Science Publishers.

Silverman, L.H., Bronstein, A., & Mendelsohn, E. (1976). The further use of the subliminal psychodynamic activation method for the experimental study of the clinical theory of psychoanalysis. Psychotherapy: Theory, Research and Practice, 13, 2-16.

Silverman, L.H., & Candell, P. (1970). On the relationship between aggressive activation, symbiotic merging, intactness of body boundaries, and manifest pathology in schizophrenia. Journal of Nervous and Mental Disease, 150, 387-399.

Silverman, L.H., Frank, S., & Dachinger, P. (1974). Psychoanalytic reinterpretation of the effectiveness of systematic desensitization: Experimental data bearing on the role of merging fantasies. Journal of Abnormal Psychology, 83, 313-318.

Silverman, L.H., Klinger, H., Lustbader, L., Farrell, J., & Martin, A.D. (1972). The effect of subliminal drive stimulation on the speech of stutterers. Journal of Nervous and Mental Disease, 155, 14-21.

Silverman, L.H., Kwawer, J.S., Wolitzky, C., & Coron, M. (1973). An experimental study of aspects of the psychoanalytic theory of male homosexuality. Journal of Abnormal Psychology, 82, 178-188.

Silverman, L.H., Lachmann, F., & Milich, R. (1982). The search for oneness. New York: International Universities Press.

Silverman, L.H., & Lachmann, F.M. (1985). The therapeutic properties of unconscious oneness fantasies: Evidence and treatment implications. Contemporary Psychoanalysis, 21(1), 91-115.

Silverman, L.H., Levinson, P., Mendelsohn, E., Ungaro, R., & Bronstein, N. (1975). A clinical application of subliminal psychodynamic activation: On the stimulation of symbiotic fantasies as an adjunct in the treatment of hospitalized schizophrenics. Journal of Nervous and Mental Disease, 161, 379-392.

Silverman, L.H., Martin, A., Ungaro, R., & Mendelsohn, E. (1978). Effect of subliminal stimulation of symbiotic fantasies on behavior modification treatment of obesity. Journal of Consulting Psychology, 46, 432-441.

Silverman, L.H., Pettit, T.F., & Dunne, E.J. (1971). On the relationship between self-object differentiation, symbiotic experiences and pathology reduction in schizophrenia. Journal of

Nervous and Mental Disease, 152, 118-128.

Silverman, L.H., Ross, D., Adler, J., & Lustig, D. (1978). A simple research paradigm for demonstrating subliminal psychodynamic activation. Journal of Abnormal Psychology, 87, 341-357.

Silverman, L.H., & Silverman, D.K. (1964). A clinical-experimental approach to the study of subliminal stimulation: The effects of a drive-related stimulus upon Rorschach responses. Journal of Abnormal and Social Psychology, 69, 158-172.

Silverman, L.H., & Spiro, R.H. (1967). Further investigations of the effects of subliminal aggressive stimulation on the ego functioning of schizophrenics. Journal of Consulting Psychology, 31, 225-232.

Silverman, L.H., & Spiro, R.H. (1968). The effects of subliminal, supraliminal, and vocalized aggression on the ego functioning of schizophrenics. Journal of Nervous and Mental Disease, 146, 50-61.

Silverman, L.H., Spiro, R.H., Weisberg, J.S., & Candell, P. (1969). The effects of aggression activation and the need to merge on pathological thinking in schizophrenia. Journal of Nervous and Mental Disease, 148, 39-51.

Silverman, L.H., & Weinberger, J. (1985). Mommy and I are one: Implications for psychotherapy. American Psychologist, 40(12), 1296-1308.

Spiro, R.H., & Silverman, L.H. (1969). Effects of body awareness and aggressive activation on ego functioning of schizophrenics. Perceptual and Motor Skills, 28, 575-585.